From: Rachael Oldroyd Sent: 25 October 2018 16:23

To: Planning

Subject: RE: Boggle Hole Youth Hostel, Mill Bank, Mill Beck, Fylingthorpe, - NYM/2018/0611/FL

Dear Sirs,

Further to your email below on 4th October please see attached the tree survey for the above application as requested.

Please let me know if you require any further information.

Kind regards,

Rachael Oldroyd



107 Timber Wharf, Worsley Street Castlefield, Manchester M15 4NX

Arboricultural Impact Assessment

- in accordance with BS5837: 2012

Boggle Hole YHA Hostel

Mill Beck

Whitby

YO22 4UQ

24th October 2018

Reference: JC/163/181024

Prepared for:

YHA (England & Wales) Ltd

Prepared by:

Jon Coe Tree Services Ltd

Registered in England and Wales as limited company number 09689319

Registered office at 13 Green Oak Road, Sheffield, United Kingdom S17 4FP

Summary of report

This report considers the impact on trees of a proposed bin storage area at Boggle Hole Youth Hostel near Whitby.

The surveyed trees are all unremarkable: a goat willow, three hawthorns, a couple of blackthorns and a boundary row of topped blackthorn stumps with regrowth.

The stump of a previously felled goat willow, with approximately 2 metres of regrowth, will be removed in order to implement the proposed works.

The exact line of the legal boundary is not obvious when surveying, but it seems that part of the row of topped blackthorn stumps is either within the development footprint or immediately adjacent to it. As such, approximately 6 or 7 of these topped stumps may be lost in the implementation of the proposed works.

Replacement or not of these removed blackthorn stumps should be discussed between the parties owning either side of the boundary line.

The retained trees are not expected to suffer any significant effects as a result of the construction process. Tree protection during construction has been thoroughly considered, but no additional measures are required. The proposed works and the existing site features are such that significant tree harm is particularly unlikely.

Photographs and drawings are provided to illustrate the relevant points.

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1. Introduction

1.1 Terms of instruction

Jon Coe Tree Services Ltd were instructed by Paul Dennis (for YHA England and Wales Ltd) to survey and report on the arboricultural implications of a proposed new bin area at Boggle Hole Youth Hostel.

1.2 Scope of survey

The key requirements identified were to establish the condition of the trees on site and the impact of the proposed works upon them, in accordance with BS5837: 20121 'Trees in relation to design, demolition and construction: Recommendations' (referred to herein as BS5837: 20121). This was not a detailed risk assessment survey.

1.3 **Documents supplied by client**

A red planning area outline and a proposed site layout were supplied by email from Just H Architects.

1.4 Items included within this report

The main report describes, in this order: the collection of data; summary of data; arboricultural impact; tree protection; arboricultural method statement and other relevant issues. It is followed by photographs, references and the appendices.

Central to the purpose of this report are Appendices H and I - drawings of Arboricultural Impact and Tree Protection.

1.5 **Qualifications and experience**

The survey and report were carried out by Jon Coe, who holds a BSc (Honours) degree in Arboriculture from Myerscough College, Professionalgrade membership of the Arboricultural Association, and Associate membership of the Institute of Chartered Foresters.

Jon undertakes many shorter courses as part of his commitment to professional development. These have included the following Arboricultural Association courses:

- BS5837: Tree surveying and categorisation
- BS5837: Tree assessment for planning applications
- BS5837: Managing trees on construction sites

Jon has fourteen years of continuous experience working in the arboricultural industry.

1.6 Caveats and limitations

This report is for the use of the client only. Its use or reproduction by any other party is forbidden without the author's prior written consent.

No reliance should be given to any non-arboricultural observations, which are made from the standpoint of a layperson.

The survey was solely concerned with the requirements of BS5837: 2012¹. The survey was not a risk assessment survey, and it considered tree health only so far as necessary to fulfil the requirements of BS5837: 2012¹.

The survey and all observations were made from ground level only.

No soil samples were taken.

On occasion, stem diameter measurements were not possible or practical, and in these cases a conservative estimate (i.e. favouring a larger RPA) was made, and recorded as such. Such cases may include where there are a large number of small stems in a multi-stemmed tree, or where trees are surrounded by dense or thorny undergrowth.

Observations were valid at the time they were made. However, trees are dynamic and growing structures that experience changes affected by time, weather and other factors.

2. **Data collection**

2.1 Site visit

The survey was conducted on Friday 19th October 2018. It was a dry sunny day, and visibility was fine for survey purposes.

2.2 The site and tree layout

The survey area is primarily a scrubby bank that slopes from the roadside upwards at a low angle, to meet a scrappy line of topped blackthorn stumps along the boundary with the field to the east. In the middle of the bank area is a low willow stump with low bushy regrowth: the remainder of the bank is recently strimmed light vegetation. At the southern edge of the survey area is a gated access to that same field. At the northern end of the survey area, beyond the proposed works, is a fenced service unit with access steps from the roadside: adjacent to and further north from this are a handful of trees that are included in the survey

The described layout features can be seen on the drawings at Appendix F and I, and in the Photographs section.

Individual tree's details are recorded in the Tree Schedule (Appendix A) and the Tree Constraints data (Appendix B). Findings are summarised in section 3.1.

2.3 Survey method

The trees were surveyed without influence of the development proposal.

Each tree was given a tree identification number, as shown on the Tree Constraints Plan (Appendix F).

A topographical survey was not available prior to the survey. The arboricultural surveyor has therefore recorded each stem's location himself, to the best of his ability. This involved taking measurements by laser rangefinder, from fixed points that are visible on site and on the base OS Mastermap that was used. These fixed points were fence corners and fencelines.

The species of each tree was recorded. Common names are used in the Tree Schedule (Appendix A), with a list of botanical names supplied in Appendix C.

Where appropriate, trees were assigned to group locations if they formed cohesive arboricultural units.

Tree height was estimated in metres (m), to the nearest 0.5 m (rounded up) - or the nearest metre for trees above 10 m. At regular intervals, or for trees where precise height is likely to be important, it was recorded using the 'Measure Height' Android app; this has been checked for accuracy using a Suunto clinometer, to which it bears close comparison.

Stem diameter was measured in millimetres (mm) using a diameter tape, in accordance with the conventions detailed in Annex C of BS5837: 20121, which in most cases is at 1.5m above ground level.

Crown spread was recorded at the four cardinal points, to the nearest 0.5m (rounded up) - using a laser range-finder (Leica Disto D810).

Height of canopy clearance was recorded to the nearest 0.5 m. This was often an estimate, as canopy clearance is not usually consistent around the whole tree; a figure for the typical low point around the canopy was therefore estimated. Where appropriate, minor or epicormic branch growth was disregarded, in order to better portray the situation so far as clearance was concerned.

Age class was assessed according to the five possible categories listed in BS5837: 2012¹. These are young, semi-mature, early-mature, mature and over-mature.

Structural and physiological condition of trees were separately assessed and summarised using five possible categories: poor, moderate, fair, good, very good. More specific observations on condition were noted under 'Observations'.

'Observations' included details of specific structural and physiological issues, notes on past and suggested future management, and problems currently presented by the trees.

An estimate was made (in years) of the potential remaining contribution that each tree could offer, in its current situation, without a need for significant tree surgery operations.

Each tree was categorised according to the guidance given in BS5837: 2012¹ (Appendix D). Retention categories of A, B, C or U were allocated (in descending order of tree quality), with an additional sub-category of 1, 2 or 3 that defines whether the principal category was allocated for arboricultural, landscape or cultural reasons respectively.

3. **Summary of data**

3.1 **Trees**

The most prominent tree in the survey area is a goat willow (tree 001). It is a reasonable example of this unremarkable and relatively short-lived species.

Three hawthorns are recorded. One of these has very poor vitality as it is swamped by ivy. The other two are pleasant enough as small native trees and appropriate features in the landscape, but are certainly lacking in any special merit.

Two blackthorns adjacent to the fenced service area are completely unremarkable, though like hawthorn they have some value to native wildlife.

In the centre of the proposed works is the stump of a previously felled goat willow, with approximately 2 metres of regrowth.

Along the eastern boundary of the survey area, where it meets the field, is a row of topped blackthorn, all sprouting regrowth. This is not an impressive or special feature. Its only merit is really as a visual screen (the adjacent field is also contained by a wire fence, so the boundary quality is not too important).

Many of these trees can be seen in Photos 1 to 3.

Individual tree's details are recorded in the Tree Schedule (Appendix A) and the Tree Constraints data (Appendix B).

3.2 **Retention categories**

Retention categories have been assigned in accordance with the criteria in BS5837: 2012¹ (Appendix D).

All of the trees on site lack the qualities required to raise them above the level of category C.

One hawthorn is assigned category U (tree 003) as the densely smothering ivy means it is most unlikely to live for more than 10 years.

3.3 **Below ground constraints**

The Root Protection Areas (RPAs) are the areas in which construction and activities related to the construction process should not take place, in order to protect the trees' root systems. Where such activities cannot be avoided, it may be possible to incorporate design measures that prevent the damage that may occur to the tree's health and stability through soil compaction, level changes, root severance and contamination. Sections 6 and 7 of BS5837: 2012¹ outline methods for protecting RPAs during the construction process, and for building within them where this is unavoidable.

RPAs are generically calculated as an area equivalent to a circle with a radius 12 times the stem diameter, in accordance with section 4.6.1 of BS5837: 20121; this also provides methods for calculating the combined stem diameter of multi-stem trees.

In accordance with BS5837: 2012¹, the RPAs listed in the Tree Constraints data (Appendix B) have been determined from the stem diameter by using Table 4 (Appendix E), whose values are themselves extracted from Table D.1 in Annex D of the standard (BS5837: 20121). Stem diameters are rounded up to align with those in Table 4; potentially to the trees' benefit.

Where group locations occur, a continuous RPA boundary has been shown on the Tree Constraints Plan (Appendix F). The extent of this boundary has been determined by the tree assessor, using a balanced judgement of the various contributing factors - particularly the species composition and density of the group.

3.4 **Above ground constraints**

Data for crown spread is listed in the Tree Constraints Data (Appendix B). Additionally, the Tree Schedule (Appendix A) contains data on canopy clearance, and the height of the first major branch (where applicable).

4. **Arboricultural Impact Assessment**

4.1 The impact of proposed development on trees 001 to 006

Trees 001 to 006 are not expected to suffer any significant effects as a result of the proposed works. Tree protection during construction has been thoroughly considered, but no additional measures are required. The proposed works and the existing site features are such that significant tree harm is particularly unlikely.

4.2 The impact of proposed development on tree 007 and group 008

Tree 007 is the stump of a previously felled goat willow, with approximately 2 metres of regrowth. It will be removed in order to implement the proposed works.

Group 008 is a row of topped blackthorn, all sprouting regrowth. The exact line of the legal boundary is not obvious when surveying, but it seems that part of this row is either within the development footprint or immediately adjacent to it. As such, approximately 6 or 7 of these topped stumps may be lost in the implementation of the proposed works.

4.3 Replacement planting

For any of the topped blackthorn row (group 008) that are lost due to the required excavations, replacements should be planted following completion of construction works - unless the owner of the neighbouring field prefers that they are not replaced. The exact specification for replacements should if necessary be discussed between the parties owning either side of the boundary line. Blackthorn or hawthorn would be appropriate native species for this situation.

5. **Tree Protection Plan**

5.1 No additional requirements beyond the existing site features

Any specific tree protection measures at this site would be unnecessary and superfluous, as the proposed works and the existing site features are such that significant tree harm is particularly unlikely. Here follows a description of the relevant features.

North of the proposed bin area is an existing service unit and stepped access that serve as ample physical barrier for this situation – see Photo 3. These prevent construction works crossing into root areas from the direction of the proposed bin area.

Close to the fenced service unit, a concrete rampline leads into an existing farm track with ongoing tractor usage apparent and longstanding - see Photo 3. The use of this drive area for storage of materials or vehicles during the construction process will present no additional significant risk to the retained trees beyond that which already occurs during normal farm working activities - and the existing undergrowth and banking (sloping upwards to the east) will prevent any damaging incursions into the unsurfaced root areas of low quality trees 1, 4 and 5.

See also Photo 3 and Appendix I for illustration of these features.

6. **Arboricultural Method Statement**

6.1 Tree removals

All tree removals should be carried out in accordance with the various guidance in BS 3998: 2010 Tree work – Recommendations 2.

6.2 Severing or exposing tree roots

It may well be that in the excavation of the proposed bin area some roots of retained parts of group 008 are encountered (i.e. blackthorn stumps to north or south whose retention is planned). If it is necessary to sever any such minor roots this can be done using secateurs or a sharp handsaw. The size and height of these blackthorn stumps is such that unexpected instability and hazard through root loss is not anticipated: any destabilisation of the trees will be obvious.

Any roots that are exposed should be immediately covered to prevent drying out, and to protect them from sudden temperature changes. This is especially important during the colder months, when frost damage of roots is a significant risk (BS5837: 2012¹, 7.2.2).

6.3 **New hedging**

If any of the topped blackthorn row (group 008) are lost due to the required excavations they should be replaced following completion of construction works. The exact specification for replacements should if necessary be discussed between the parties owning either side of the boundary line. Blackthorn or hawthorn would be appropriate native species for this situation. New hedging should be planted at spacings of five hedging whips per metre. Regular watering and removal of weed competition is important in the first few years, and the need or not for protection of the planted whips from rodent browsing should be assessed.

7. Other observations

7.1 Legal status of trees on site

The survey area is within the North York Moors National Park. Please note that the status of trees on site - with regard to specific Tree Preservation Orders and Conservation Areas - has not been independently checked. The relevant legislation to these matters is contained within the Town and Country Planning Act 1990 ³ and The Town and Country Planning (Tree Preservation) (England) Regulations 2012 4.

7.2 Wildlife considerations and law

The requirements the following legislation should also be considered in the planning of any arboricultural operations.

Wildlife and Countryside Act 1981

- Countryside and Rights of Way Act 2000 ⁶
- The Conservation of Habitats and Species Regulations 2010 ⁷
- The Conservation of Habitats and Species (Amendment)
 Regulations 2011 ⁸

One combined effect of the above legislation is that tree work operations must be planned to avoid disturbance to nesting, breeding or roosting birds, or to bats and their roosts. The nests of wild birds are protected whilst in use, and all 18 bat species found in the UK are afforded European Protected Species status.

7.3 Standards of tree work

Unless otherwise specified, any tree work recommended in this report should be carried out in accordance with the British Standard *BS 3998:* 2010 Tree work – Recommendations ².

Reference List

- British Standards Institution (2012) BS 5837: 2012 Trees in relation to design, demolition and construction - Recommendations. London, BSI Standards Ltd.
- ^{2.} British Standards Institution (2010) BS 3998: 2010 Tree work -Recommendations. London, BSI Standards Ltd.
- 3. Town and Country Planning Act 1990. London, HMSO.
- ^{4.} The Town and Country Planning (Tree Preservation) (England) Regulations 2012. London, HMSO.
- ^{5.} Wildlife and Countryside Act 1981. London, HMSO.
- ^{6.} Countryside and Rights of Way Act 2000. London, HMSO.
- ^{7.} The Conservation of Habitats and Species Regulations 2010. London, HMSO.
- The Conservation of Habitats and Species (Amendment) Regulations 2011. London, HMSO.

Photographs



Photo 1. The proposed bin storage will be in the approximate area indicated by yellow shape on drawing. With the exception of the scrappy topped blackthorn hedgeline (group 08) and willow stump 07, all trees recorded are at the left of picture, adjacent to the farm track that ramps up from the road.



Photo 2. A more distant view of the same features as Photo 1. The red arrow points to tree 01 (goat willow). The yellow arrow points to the willow stump (07). To the right (east) of the proposed bin area, the field-edge line of scrappy topped blackthorn stumps is obvious.



Photo 3. The arrows point to the existing service unit and stepped access that serve as ample physical barrier for this situation - preventing construction works crossing into root areas from the direction of the proposed bin area.

The obvious concrete rampline leads into an existing farm track with ongoing tractor usage apparent and longstanding. The use of this drive area for storage of materials or vehicles during the construction process will present no additional significant risk to the retained trees beyond that which already occurs during normal farm working activities - and the existing undergrowth and banking (sloping upwards to east/right) will prevent any damaging incursions into the unsurfaced root areas of low quality trees 1 to 5. Any specific tree protection measures here would be unnecessary and superfluous as the proposed works and the existing site features are such that significant tree harm is particularly unlikely.

Appendices

Tree Schedule (excluding Root Protection Areas and crown spread) Appendix A:

Table 1 (overleaf) contains data for all trees, excluding Root Protection Areas and crown spread details - which are found in Appendix B.

Condition categories, in ascending order of quality: poor - moderate - fair - good - very good

Tree Number	Species (common name)	Height (m)	Canopy clearance (m)	Life stage	Observations, and suggestions for management	Remaining contribution (years)	BS retention category	Condition (physiological : structural)
001	Willow, Goat	10	2	Mature	A reasonable example of this unremarkable species.	20+ Years	C1	Fair : Fair
002	Hawthorn, Common	7.5	2.5	Mature	No significant issues observed	20+ Years	C1	Fair : Fair
003	Hawthorn, Common	5	2	Over Mature	Densely ivy clad, tree will soon be dead	<10 years	U	Poor : Moderate
004	Hawthorn, Common	7	1	Mature	Boundary hawthorn, dense ivy	10+ Years	C1	Fair : Moderate
005	Blackthorn	6	2	Early Mature	No significant issues observed	20+ Years	C1	Fair : Moderate
006	Blackthorn	8	2	Early Mature	No significant issues observed	20+ Years	C1	Fair : Moderate
007	Willow, Goat	2	0		Stump of previously felled goat willow, with approximately 2 metres of regrowth.	20+ Years	C1	Moderate : Poor
008	Blackthorn	2	0	Mature	Boundary hedgeline formed of a row of topped blackthorn, all sprouting regrowth. Not an impressive feature. Only merit is really as habitat and a visual screen (the adjacent field is also contained by a wire fence, so the boundary quality is less important).	20+ Years	C2	Fair : Moderate

Table 2 (overleaf) contains data for Root Protection Areas and crown spread for all trees – all other tree data is found in in Appendix A.

		Diameter	Diameter (mm) - 2 to 5 stems		Mean stem diameter (mm)	Calculated stem	Radius of nominal circle (m)(from	RPA Area (m²)		Crown s	pread (m)				
Tree Number	No. of stems	(mm) single stem	stem 1	stem 2	stem 3	stem 4	stem 5	> 5 stems	diameter (mm)	BS5837: 2012 ¹ Annex D)	(from BS5837: 2012 ¹ Annex D)	north	south	east	west
001	1	600							600	7.2	163	6	6	6	6
002	2		300	250					391	4.8	72	3	3	1.5	3
003	1	300							300	3.6	41	3	0	2.5	1.5
004	3		200	150	150				292	3.6	41	2	4	1	4
005	1	150							150	1.8	10	3	1	1	3
006	1	250				_			250	3	28	4	1	1	2
007	1	250							250	3	28	1.5	1.5	1.5	1.5
008		Group feature - see Tree Constraints Plan for RPA and canopy constraints													

Appendix C: Key to botanical names

Blackthorn - Prunus spinosa

Common hawthorn - Crataegus monogyna

Goat willow - Salix caprea

Appendix D: Tree retention categories

Trees are assessed for retention categories in the order in which those categories appear in the table below – with all trees initially assessed against the criteria for category 'U', followed sequentially by categories 'A', 'B' and 'C'.

Table 3 (overleaf) is based on Table 1 of BS5837: 2012 ¹; some but not all of the text is necessarily reproduced verbatim.

Trees that are not suitable for retention

Category U

Trees whose condition means that their retention as living trees beyond 10 years is unrealistic in the context of the current land use

Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (where, for example, the loss of companion shelter cannot be mitigated by pruning). Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline. Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality.

In some circumstances, category U trees may have conservation value which it might be desirable to preserve, despite tree condition.

Trees whose retention should be prioritised

	1.	2.	3.
	Predominantly arboricultural merit	Predominantly landscape merit	Predominantly cultural merit
			(includes conservation value)
Category A	Trees that are particularly good	Trees, groups or woodlands that	Trees, groups or woodlands that
High quality trees, currently with	examples of their species, especially	have particular visual importance	have significant conservation,
life expectancy of at least 40	rare or unusual species. Also trees	as arboricultural and/or landscape	historical, commemorative or
years	that are essential components of	features	other value (such as veteran
	groups or formal or semi - formal		trees or wood - pasture)
	arboricultural features (such as an		
	avenue's dominant or		
	principal trees).		

Trees whose retention should be considered (with Category B assuming the greater priority in retention decisions)							
	1.	2.	3.				
	Predominantly arboricultural merit	Predominantly landscape merit	Predominantly cultural merit				
			(includes conservation value)				
Category B	Trees that are excluded from	Trees present in numbers, often	Trees that have material				
Moderate quality trees, currently	category A due to impaired condition	those growing as groups or	conservation or other cultural				
with life expectancy of at least	(such as the presence of significant	woodlands, such that their	value				
20 years	though remediable defects, including	collective rating is higher than that					
	unsympathetic past management	which they might attract as					
	and storm damage), such that they	individuals. Also trees occurring					
	are unlikely to be suitable for	as collectives but situated so as					
	retention beyond 40 years. Also	to make little visual contribution to					
	trees that simply lack the special	the wider locality					
	quality necessary to merit the						
	category A designation.						
Category C	Trees that are unremarkable or of	Trees growing as groups or	Trees lacking any material				
Low quality trees, currently with	very limited merit, or that have such	woodlands, but without this	conservation or other cultural				
life expectancy of at least 10	impaired condition that they do not	conferring on them significantly	value				
years. Also young trees of stem	qualify in higher categories	greater collective landscape					
diameter <150mm.		value. Also trees offering low or					
		only temporary/transient					
		landscape benefits					

Appendix E: Calculating Root Protection Areas

Table 4. This table was used to establish Root Protection Areas (RPAs) in accordance with section 4.6.1 of BS5837: 20121, and Annex D of the same standard (from which this table's values are drawn). 'Stem diameter' refers to either the measured diameter of single stem trees, or the calculated combined stem diameter of multi-stem trees (BS5837: 20121, 4.6.1).

Stem	Radius of a	RPA –		
diameter	uniformly	area (m²)		
(mm)	circular RPA (m)			
75	0.9	3		
100	1.2	5		
125	1.5	7		
150	1.8	10		
175	2.1	14		
200	2.4	18		
225	2.7	23		
250	3.0	28		
275	3.3	34		
300	3.6	41		
325	3.9	48		
350	4.2	55		
375	4.5	64		
400	4.8	72		
425	5.1	81		
450	5.4	92		
475	5.7	102		
500	6.0	113		
525	6.3	124		
550	6.6	137		
575	6.9	150		
600	7.2	163		
625	7.5	177		
650	7.8	191		

- C	- · ·	DD 4
Stem	Radius of a	RPA –
diameter	uniformly	area (m²)
(mm)	circular RPA (m)	
675	8.1	206
700	8.4	222
725	8.7	238
750	9.0	255
775	9.3	272
800	9.6	290
825	9.9	308
850	10.2	327
875	10.5	346
900	10.8	366
925	11.1	387
950	11.4	408
975	11.7	430
1000	12.0	452
1025	12.3	475
1050	12.6	499
1075	12.9	519
1100	13.2	547
1125	13.5	573
1150	13.8	598
1175	14.1	625
1200	14.4	652
1225	14.7	679
1250+	15.0	707

Appendix F: Tree Constraints Plan

The Tree Constraints Plan (overleaf) indicates the locations, retention categories, Root Protection Areas and crown spreads of all relevant trees. A topographical survey was not available prior to the survey. The arboricultural surveyor has therefore recorded each stem's location himself, to the best of his ability. This involved taking measurements by laser rangefinder from fixed points that are visible on site and on the base OS Mastermap that was used: these fixed points were fence corners and fencelines.

Appendix G: Proposed development plan

The proposed layout overleaf, on which this report's findings are based, was supplied by Just H Architects.

Arboricultural impact assessment – drawing Appendix H:

The drawing overleaf illustrates the proposed layout in relation to trees, as referred to in the Arboricultural Impact Assessment (section 4).

Tree protection plan - drawing Appendix I:

The drawing overleaf illustrates the features referred to in the Tree Protection Plan (section 5). Neither this drawing nor section 5 stands alone; both should be referred to together.